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Appl. No. 10/585,398
Amdt. dated Dec. 19, 2007
Reply to Office action of Oct. 01, 2007

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1- 25 (canceled)

New set of claims:

Claim 26 (NEW) Automatic weapon with caseless ammunitions wherein the improvement comprises:

- a piston/chamber sealing device using bore size variation of ball-joint corollas,
- a piston/chamber coupling device using gaz propelled spigots,
- a compartmented clip sequencing device,
- a counter-trigger safety device.

Claim 27 (NEW) Automatic weapon with caseless ammunitions according to claim 1 characterised in that the sealing corollas (41 sept, oct & nove) be ball-joint with chamber wall and such as:

- the thickness of its section decreases regularly, according to a generating line preferentially but not exclusively curve, ranging between the base (B) and the upper edge (O) in order to favour, under gas pressure or a narrowing of the chamber (62), an elastic radial variation of the curve combined with a torsion of the complete section (fig. 6/17) which swivels on the rounded interior edge (fig. 6/15, B) of its base,
- the external face comprises an angular sector (fig. 6/15), on each side of largest boring point (C), whose radius is advantageously close to that of the receiving chamber in order to favor a peripheral boring sealing contact of the ball-joint type,
- the internal edge (fig.6/15, B) of the base of the section is preferentially circular in order to ensure a radial section sealing contact per valve effect between the walls (fig. 6/16 & 6/18, 42 quint & 42 six) of its housing groove (42),
- boring, at rest, of the upper external edge (fig. 6/17, O) is at most equal to that of the piston head.

Claim 28 (NEW) Automatic weapon with caseless ammunitions according to claim 1 characterised in that the sealing corolla (41 onze) be part (fig. 6/19 & 6/20) of the main piston shaft to form an integrated piston with ball-joint corolla.

Claim 29 (NEW) Automatic weapon with caseless ammunitions according to claim 1 characterised in that the corollas (41 sept, 41 oct, 41 nove) be disposed:

- in front of radial lights or crenels (40 ter) arranged on the periphery of the cartridge basin so as to uniformly distribute the action of propellant gases on the internal face of the segment, couple of segments (41, 41 bia, 41 ter, 41 quart & quint, 41 sept) or corollas (41 sept, nove & eleven) causing a uniform diameter increase and a contact with the cylinder wall (62) of piston housing ensuring thus the gas sealing.

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- the opening directed towards the piston head in the case of corollas (fig 6/16 & 6/18, 41 sept & 41 nove) with some lateral and axial play in a housing (42) of said piston comprising at the level of its lower edge a receiving groove (42 quart) for the corolla base or foot in order to facilitate the angular torsion displacement of the section and the ball-joint contact of the internal rounded edge (fig.6/15) of said base playing between the lower shoulder (42 six) of the groove (42 quart) and its upper conical shoulder (42 quint) according to whether gas pressure pushes the corolla towards the bottom of the piston or friction against the chamber wall tends to lift it up.
- upside-down (41 oct.) with the sealing corolla (41 sept) in order to constitute a scraping corolla such that the some peripheral line be in contact with the edge of the chamber entry as soon as the cylinder head is fully closed.

Claim 30 (NEW) Automatic weapon with caseless ammunitions according to claim 1 characterised in that the contact between the chamber and the piston is mechanically favoured by a narrowing (fig. 6/15 & 6/16, A) located at the bottom of the piston receiving chamber (62) such that a peripheral generating line of the corolla be in contact with the wall of said chamber when the piston is reaching its course limit.

Claim 31 (NEW) Automatic weapon with caseless ammunitions according to claim 1, characterised in that the barrel/breech solidarisation device be composed of:

- radial laid out spigots housing (56), communicating with channels (39, 40) emerging in the cartridge basin, which ensure, under the pressure of propellant gases, the displacement of said spigots (54 & 55) according to an outwards radial direction outside the skirt, said skirt having a conical housing limiting the course of each spigot thus operating a tight connection of the valve type,
- spigots (54, 55).

Claim 32 (NEW) Automatic weapon with caseless ammunitions according to claim 1 characterised in that the trigger safety (68) or "counter-trigger" be composed of:

- an operating (68) bar or counter-trigger lever integral with the trigger guard bolt and retractable in a housing (69) of said trigger guard,
- a trigger locking device manoeuvred by angular rotation of the trigger (64) following a pressure exerted on its back face.

Claim 33 (NEW) Automatic weapon with caseless ammunitions according to claim 1 characterised in that the trigger locking device is composed of a female housing (67) receiving the warp end (66 bis) of the trigger guard bolt and a circular cam (67 bis) over a portion of angle corresponding to the backwards clearance (shooting) of the trigger, cam on which the warp end is pressing under the action of the return spring of the bolt and said housing (67) positioned in such way that its engagement by the warp end is only possible after the trigger carried out an anti-clockwise rotation suitable to erase a setback (67 ter) involving an embossing effect by slight retreat of the warp end right before it engages its trigger housing (67).

Claim 34 (NEW) Automatic weapon with caseless ammunitions according to claim 1 characterised in that the magazine compartments coupling/sequencer device is composed of a cartridge arm stopper (103) comprising at its end a horizontal abutment (103 bis), articulated on the back wall of the magazine well with which it is integral via an axis crossing the frame:

- either in a parallel way to the barrel axis in order to ensure a lateral swivelling of the stopper-arm (103) and its horizontal abutment (103 bis) initiated by the rise of the front conveyer button (101) who, as soon as the last cartridge leaves the compartment, causes the swing of a transmitting rod housed in the internal side wall of the magazine well and mounted swivelling on its median axis to cooperate with an arm integral to that (103) of the cartridge stopper to involve its lateral swing.
- either in a perpendicular way to the barrel axis in order to ensure a backwards swivelling of the stopper which then comprises an locking-arm (103 ter) equipped at its end with a pin (102 bis) to co-operate with a locking hook (102).

Claim 35 (NEW) Automatic weapon with caseless ammunitions according to claim 1 characterised in that the stopper hook (102) comprises a cam (102 ter) cooperating with the conveyer button (101) of the front compartment in order to cause its swivelling.